

Simultaneous Quadruple Series Equations Involving Jacobi and Laguerre Polynomials

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Abstract: *A Closed form solution has been obtained for simultaneous quadruple series equation involving Jacobi polynomials. Results for similar quadruple series equations involving Laguerre polynomials are also deduced by applying a limit process. This paper presents the derivation and solution of simultaneous quadruple series equations involving Jacobi and Laguerre polynomials. The study extends classical results by addressing complex series relationships, providing valuable insights for mathematical analysis and applications in physics and engineering*

Keywords: Simultaneous quadruple series equations, Jacobi polynomials, Laguerre polynomials, Hyper - geometric functions, Gamma functions, Sonine integrals of the first and second kinds.